therefore

$$\text{N}b \;=4271473\cdot522,$$

and

$$2\text{N}b \;=8542947\cdot044.$$

From (5) . . . $\text{P}\,.\,a=\cdot957\,(134920)\,(t+5\cdot5)+3\cdot56745\,(134920)$
$=129118\cdot44\,t+1191511\cdot78;$

„ (6) . . . $\text{F}\,.\,c=\cdot4975\,(134920)\,(t+5\cdot5)-\cdot4975\,(527854\cdot4)$
$=67122\cdot7t+106567\cdot28;$

„ (7) . . . $\text{Q}\,.\,q=101\cdot22798\,t^3+186\times101\cdot22798t^2.$

Adding and reducing, the equation for *equilibrium* (3) becomes

$$t^3+186t^2+1938\cdot6t-29373\cdot24=0,$$

whence $t=8\cdot2$ ft. for *equilibrium.*

And the equation for *stability* (4) becomes

$$t^3+186t^2+1938\cdot6t-71570=0,$$

whence $t=14\cdot66$ ft. for *stability.*

In the construction of this particular dome, the values obtained above for t will only apply to four points on the walls which carry the dome; for instead of being built on a circular "drum," this drum is made to cover a square chamber by means of "pendentives," which are so arranged as to throw the thrust principally on the angles of the building, where the values of a and c will become very great, and it is only at the centre of each of the four sides that the above equations can be employed to compare the thrust of the dome with the strength of the walls. At these four points the walls are about 11 ft. thick, so as to be considerably more than sufficient to produce *equilibrium*; and the *coefficient of stability* at these points is 1·374 instead of 2. Had the dome therefore been built on a circular drum of 11 feet thickness, in all probability the edifice would not have stood for any length of time.

Much of the thrust of a dome may be counteracted by means of an iron belt placed round it at the point where the thrust is greatest. This point I have shown to be at 70° from the crown, or 20° from the springing.

June 7, 1866.

The Annual Meeting for the election of Fellows was held this day.

Lieut.-General SABINE, President, in the Chair.

The Statutes relating to the Election of Fellows having been read, Professor Brayley and Mr. Toynbee were, with the consent of the Society, nominated Scrutators to assist the Secretaries in examining the Lists.

The votes of the Fellows present having been collected, the following Candidates were declared to be duly elected into the Society :—

John Charles Bucknill, M.D.	The Ven. John Henry Pratt, M.A.
Rev. Frederick William Farrar.	Capt. George Henry Richards, R.N.
William Augustus Guy, M.B.	Thomas Richardson, Esq., M.A.
James Hector, M.D.	William Henry Leighton Russell, Esq.
John William Kaye, Esq.	Rev. William Selwyn, D.D.
Hugo Müller, Ph.D.	Rev. Richard Townsend, M.A.
Charles Murchison, M.D.	Henry Watts, B.A.
William Henry Perkin, Esq.	

June 14, 1866.

Lieut.-General SABINE, President, in the Chair.

The Rev. F. W. Farrar, Dr. Charles Murchison, Captain Richards, R.N., Mr. W. H. L. Russell, and Mr. Henry Watts, were admitted into the Society.

Pursuant to notice given at the last Ordinary Meeting, Franz Cornelius Donders, George Friedrich Bernhard Riemann, and Gustav Rose, were balloted for and elected Foreign Members of the Society.

The following papers were read :—

I. "On the Anatomy of the Fovea centralis of the Human Retina." By J. W. HULKE, F.R.C.S., Assistant Surgeon to the Middlesex and Royal London Ophthalmic Hospitals. Communicated by WM. BOWMAN, Esq. Received May 26, 1866.

(Abstract).

1. The Fovea centralis is a minute circular pit in the inner surface of the retina, made by the radial divergence of the cone-fibres from a central point, by the thinning and the outward curving of the inner retinal layers towards this point, and by the peripheral location of the outer granules belonging to the central cones.

2. The inner surface of the retina declines in a rapid uniform curve from the edge to the centre of the fovea, and very gradually from the edge towards the ora retinæ; so that the edge of the fovea is the most raised part in the macula lutea, where the retina is thickest, and the centre of the fovea the most depressed part in the macula, where the retina is thinnest.

3. At the centre of the fovea, proceeding from the outer to the inner surface of the retina, we meet with the following structures in succession :— the bacillary layer and the outer limiting membrane, a small quantity of finely areolated connective tissue, the inner granule-layer and the ganglionic layer very attenuated, a thin granular band containing optic nerve-fibres, and the membrana limitans interna.